~~TOP SECRET~~

[redacted]

PHOTOGRAPHIC
INTERPRETATION
REPORT

NATIONAL PHOTOGRAPHIC
INTERPRETATION CENTER

SEVEROMORSK RADIO COMMUNICATIONS TRANSMITTER STATION WEST USSR

25X1

~~TOP SECRET~~

[redacted]

25X1

APRIL 1971

COPY NO 118

7 PAGES

PIR-012/71

GROUP 1: EXCLUDED FROM
AUTOMATIC DOWNGRADING
AND DECLASSIFICATION

25X1

INSTALLATION OR ACTIVITY NAME			COUNTRY
Severomorsk Radio Communications Transmitter Station West			UR
UTM COORDINATES	GEOGRAPHIC COORDINATES		COMIREX NO.
NA	69-03-55N 033-20-03E		None

MAP REFERENCE

ACIC Chart, Series 200, Sheet 0051-18, scale 1:200,000

25X1

		NEGATION DATE (If required)
		NA

ABSTRACT

1. The Severomorsk Radio Communications Transmitter Station West, USSR, is an operational naval communications station. Antennas consist of ten double rhombic (night) antennas, 25 horizontal dipole antennas, four quadrant antennas, and two possible inclined vee-shaped antennas. This report includes a description of the antennas and probable correspondents. An annotated photograph and mensuration, azimuth, and reference data are included in support of the analysis.

INTRODUCTION

2. The Severomorsk Radio Communications Transmitter Station West is in northwestern USSR, 1.8 nautical miles (nm) west of the city of Severomorsk, 8 nm northeast of the city of Murmansk, and 20 nm south of the mouth of the Kola Inlet. It is situated on rolling, rocky terrain overlooking the Kola Inlet at an approximate elevation of 61 meters (200 feet). The surrounding area is chiefly tundra rising to an elevation of 305 meters (1,000 feet), and the highest point within 25 nm is 430 meters (1,410 feet).

3. This facility was first reported from KEYHOLE photography of September 1969. The principal imagery used in making the analysis for this report was

25X1

BASIC DESCRIPTION

4. This facility is probably the major transmitting station for the Soviet Northern Fleet and contains a broad span of high frequency (HF) antenna arrays (Figure 1 and Table 1). The facility contains ten double rhombic (night) arrays, 25 horizontal dipole antennas, four quadrant antennas, two possible inclined vee-shaped antennas, one unidentified mast, and a microwave antenna mast with two dishes. A support area is situated on a hill on the southeast side of the facility. It contains 22 large buildings, 15 small buildings, and a number of smaller structures (Figure 1 and Table 2). The area is secured by a single fence.

Microwave Antenna

5. The microwave antenna is behind the administration building in the support area (Figure 1). It apparently corresponds with the probable command and control center for the Soviet Northern Fleet, which is 2.5 nm east-northeast of the communications station at the Severomorsk Naval Headquarters Northern Fleet The microwave antenna may also correspond with Murmansk/ Gryaznyy Headquarters Northern Fleet Air Force which is approximately 1 nm west of Severomorsk Radio Communications Transmitter Station West.

25X1
25X1

Rhombic Arrays

6. Three of the ten double rhombic antennas are switchable arrays (Figure 1 and Table 1, items 1, 2, and 9). All are long-range night configurations. Five of the rhombics appear to cover all operating areas of the North Atlantic Ocean (item 3 through 7). The three switchable arrays serve both the Baltic area and the Arctic. Another array (item 8) also serves the Arctic. The remaining rhombic (item 10) apparently corresponds with Moscow (Figure 2).

25X1

Horizontal Dipole Arrays

7. The 25 dipole antennas (Figure 1 and Table 1, items 11 through 35) serve the area immediately around the Kola Peninsula, including the northern coastal area of Norway, the Barents Sea, and the White Sea (Figure 3). Severodvinsk may be one correspondent. The numerous dipoles provide a broad frequency range.

Quadrant Arrays

8. Three of the four omnidirectional quadrant antennas are night arrays (Figure 1 and Table 1, items 37, 38, and 39). The fourth is a day configuration (item 36). These antennas provide coverage of the area immediately around the Kola Inlet.

Possible Inclined Vee-shaped Antennas

9. Two masts identified as possible inclined vee-shaped antennas (Figure 1, items 40 and 41, and Figure 4) have associated probable antenna stakes and are served through two feed stakes. The antenna stakes form a symmetrical pattern around each mast. An available document describes a single antenna pattern, which would include a mast and two stakes.[1] These appear to be double arrays.

10. Inclined vee-shaped antennas are described as being "less effective than the stationary high-mast antennas, but are simpler in design, easier to construct and repair, and more mobile." Therefore, they are of interest as reserve antennas for stationary communication centers.[1] The possible vee-shaped antennas at the Severomorsk facility, first identified [redacted] appear to have predated most of the arrays in the northern control area.

Transmitter or Control Areas

11. Two transmitter or control areas can be discerned on photography of the Severomorsk installation (Figure 1). Each transmitter area is underground inside a hill, as evidenced by the feeder racks and switching houses adjacent to the entrances to the underground areas. The two areas contain a total of 15 switching houses.

12. The transmitter or control area that is apparently the larger of the two serves the major antenna field. This field includes eight rhombics, two quadrants, six horizontal dipoles, and one possible inclined vee-shaped antenna. Two entrances to the underground area are facing the antenna field. A third probable entrance is between the administration building (item H) and the microwave antenna. Feed lines exit from one entrance to feeder racks and disperse through four switching houses to the antenna field. Two feed lines interconnect with the smaller underground transmitter area.

13. The smaller transmitter or control area has two entrances to the underground area. The west entrance is at the base of the hill and faces a small lake or pond within the facility. The east entrance is just below the crest of the hill and is bracketed by several feeder racks. Lines from the racks disperse through four switching houses to the antennas. One line is an interconnecting line to the other control area. The second line interconnecting with the other control area enters at the west entrance. The northern antenna field contains one switchable rhombic, one unidirectional rhombic, 19 horizontal dipole antennas, and one possible inclined vee-shaped antenna. In addition, one antenna mast of unidentified function is at the feeder racks.

25X1

25X1

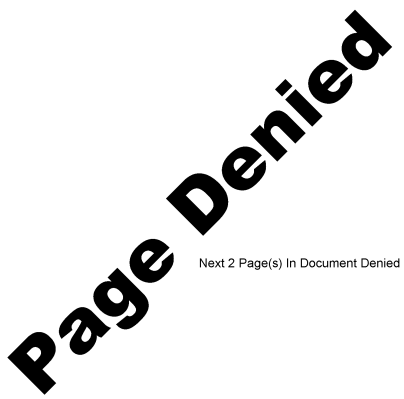
Table 1. Antenna Arrays
(Item numbers are keyed to Figure 1)

Item	Antenna Type	Soviet Designator*	Probable Correspondent
1	Double rhombic	RGD 65/4 1	Baltic/Arctic
2	Double rhombic	RGD 65/4 1	Baltic/Arctic
3	Double rhombic	RGD 70/6 1.25	North Atlantic
4	Double rhombic	RGD 70/6 1.25	North Atlantic
5	Double rhombic	RGD 70/6 1.25	North Atlantic
6	Double rhombic	RGD 70/6 1.25	North Atlantic
7	Double rhombic	RGD 70.6 1.25	North Atlantic
8	Double rhombic	RGD 65/4 1	Arctic
9	Double rhombic	RGD 65/4 1	Baltic/Arctic
10	Double rhombic	RGD 65/4 1	Moscow
11	Horizontal dipole	VGD 20/ukn d	--
12	Horizontal dipole	VGD 15/19 d	--
13	Horizontal dipole	VGD 15/17 d	Severodvinsk
14	Horizontal dipole	VGD 20/27 d	--
15	Horizontal dipole	VGD 12/14 d	--
16	Horizontal dipole	VGD 20/27 d	--
17	Horizontal dipole	VGD 12/14 d	--
18	Horizontal dipole	VGD 20/27 d	--
19	Horizontal dipole	VGD 12/14 d	--
20	Horizontal dipole	VGD 20/28 d	--
21	Horizontal dipole	VGD 12/12 d	--
22	Horizontal dipole	VGD 20/21 d	--
23	Horizontal dipole	VGD 20/13 d	--
24	Horizontal dipole	VGD 30/33 d	--
25	Horizontal dipole	VGD 15/23 d	--
26	Horizontal dipole	VGD 25/27 d	--
27	Horizontal dipole	VGD 12/28 d	--
28	Horizontal dipole	VGD 20/20 d	--
29	Horizontal dipole	VGD 15/20	--
30	Horizontal dipole	VGD 15/20 d	--
31	Horizontal dipole	VGD 25/ukn d	--
32	Horizontal dipole	VGD 15/20	--
33	Horizontal dipole***	VGDsh 12.5/41	--
34	Horizontal dipole	VGD 25/22 d	--
35	Horizontal dipole	VGD 25/22 d	--
36	Quadrant	UGD 12/18 d	Idirectional
37	Quadrant	UGD 20/27 d	Idirectional
38	Quadrant	UGD 20/20 d	Idirectional
39	Quadrant	UGD 20/20 d	Idirectional
40	Inclined vee antenna (poss)	VNB 1/H $2\phi_0$	--
41	Inclined vee antenna (poss)	VNB 1/H $2\phi_0$	--

25X1

25X1

25X1



Next 2 Page(s) In Document Denied

25X1

REFERENCES

25X1

MAPS or CHARTS

ACIC. USATC, Series 200, Sheet 0051-18, scale 1:200,000

NAVOCEANO. US Air Target Mosaic, Series 50, Sheet 0051-18.1, scale 1:500,000

DOCUMENT

1. US Department of Commerce. JPRS: 41, 131, 24 May 1967, translation from Russian of Near Earth and Buried Antennas, G. A. Lavrov and A. S. Knyazev, Moscow, Sovetskoye Radion, 1965 (UNCLASSIFIED)

RELATED DOCUMENTS

1. USSR. Committee of Standards, Measurements, and Instruments, The USSR Council of Ministers, GOST 8025-67, Transmitting Shortwave Wideband Balanced Antennas (Counterfeed), Moscow, 1967 (UNCLASSIFIED)

2. USSR. Committee of Standards, Measurements, and Instruments, The USSR Council of Ministers, GOST 6497-67, Receiving Shortwave Wideband Balanced Antennas (Counterfeed), Moscow, 1967 (UNCLASSIFIED)

3. US Department of Commerce. JPRS: 33,926, 27 Jan 66, translation from Russian of Antennas and Masts, F. A. Savitskiy, Ministry of Communications USSR, Moscow, 1962 (UNCLASSIFIED)

4. RCA Service Company. Contract F 33657-69-C-0010, 31 Dec 68, Soviet Antennas, A Contribution to the DIA Communications Equipment Handbook, (SECRET

25X1

REQUIREMENT

NPIC/IEG/WGD/SSB Project 14329INS

25X1